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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,075	03/24/2004	Anandraj Sengupta	140286-1	7093

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

MILLER, ROSE MARY

ART UNIT PAPER NUMBER

2856

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/808,075

Applicant(s)

SENGUPTA, ANANDRAJ

Examiner

Rose M. Miller

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-21 is/are rejected.
- 7) ☒ Claim(s) 8 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/24/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-7 and 9-21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the sensors comprising ultrasonic sensors, does not reasonably provide enablement for the sensors comprising either microwave (gamma) sensors, electromagnetic sensors, or optical sensors. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Applicant's specification clearly indicates the sensors utilized in the invention are to be ultrasonic sensors. However, the claims, as they are now presented, are not limited to utilizing ultrasonic sensors. There is no recitation how microwave, electromagnetic, and/or optical sensors would be attached to the outer region of the rolling object and utilized to generate a condition of a region on the three dimensional volume under test. The broad use of the term "sensor" allows for any sensor, including those not yet developed, to be utilized in the invention. A suggestion for correction is to incorporate the ultrasonic sensor into the main independent claims.

Allowable Subject Matter

3. Claims 8 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest an inspection system comprising, in combination with the other recited elements, at least one ultrasonic sensor coupled to a rolling object, the ultrasonic sensor being disposed on a non-contact outer region (or side wall) of the rolling object and at a predetermined distance from a center of the rolling object, wherein the at least one ultrasonic sensor is configured to generate signals representative of a condition of a region on the three dimensional volume.

The prior art teaches three ways of placing an ultrasonic sensor on a rolling object or roller. The first way is when the transducer is the rolling object or placed on the contacting region of the roller such that the transducer is in direct contact with the object under test. Examples of this are found in **Miller (US 3,771,354)** and **Baum et al. (US 4,291,577)**. A second roller or wheel probe is formed by placing the ultrasonic sensor within the wheel with a solid coupling between the sensor and the outside of the roller in order to form the acoustic coupling between the sensor and the object under test. **Dickson (US 4,519,251)** is a great example of this form of ultrasonic wheel probe. The final wheel probe, or rolling sensor, is formed by placing the ultrasonic sensor inside the wheel, either on the axle or spaced from the axle, with a liquid coupling between the ultrasonic sensor and the tire wall in order to form the acoustic coupling between the sensor and the object under test. These systems are especially good at testing railroad tracks as shown by the US Patents **Pagano (US 4,165,648)**, **Havira et al. (US 5,419,196)**, and **Martens (US 6,055,862)**. There is no teaching in any of these of placing the ultrasonic sensors on the outer, non-contacting region of the roller or wheel (or sidewall).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cowan (US 3,415,110) discloses an ultrasonic inspection system for testing railroad tracks.

Miller (US 3,771,354) discloses a rapid ultrasonic inspection apparatus.

Pagano (US 4,165,648) discloses a two wheel ultrasonic rail testing system.

Baum et al. (US 4,291,577) discloses an on line ultrasonic velocity gauge.

Dickson (US 4,519,251) discloses a roller-type ultrasonic inspection device with acoustical isolation.

Searle (US 5,341,683) discloses a dynamic rail longitudinal stress measuring system.

Shoenhair et al. (US 5,339,692) discloses an ultrasonic rail web centerline detector.

Havira et al. (US 5,419,196) discloses an ultrasonic side-looker for railhead flaw detection.

Martens (US 6,055,862) discloses a method of and apparatus for detecting, identifying, and recording the location of defects in a railway rail.

Art Unit: 2856

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rose M. Miller whose telephone number is 571-272-2199. The examiner can normally be reached on Monday - Friday, 7:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RMM
8 December 2005



HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800